

ABSTRACT

This invention relates to a new method for producing an iron-based Fischer-Tropsch catalyst composition wherein the main iron phase is ferrihydrite in a precipitation reaction. It has been found that the reduction of Fe(III) species to Fe(II), and thus an increase in the Fe(II)/Fe(III) ratio, prior to precipitation affects the crystallite size of the crystallite particles of the catalyst, and enhances the olefin selectivity of the catalyst. The reduction of the Fe(III) species to Fe(II) can be attained *in situ* by the addition of a reduction agent (such as oxalic acid or formic acid) during the catalyst preparation method.